Computation Institute

Status of MWT2 network upgrade

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For the MWT2 group

US ATLAS Computing Integration and Operations Meeting
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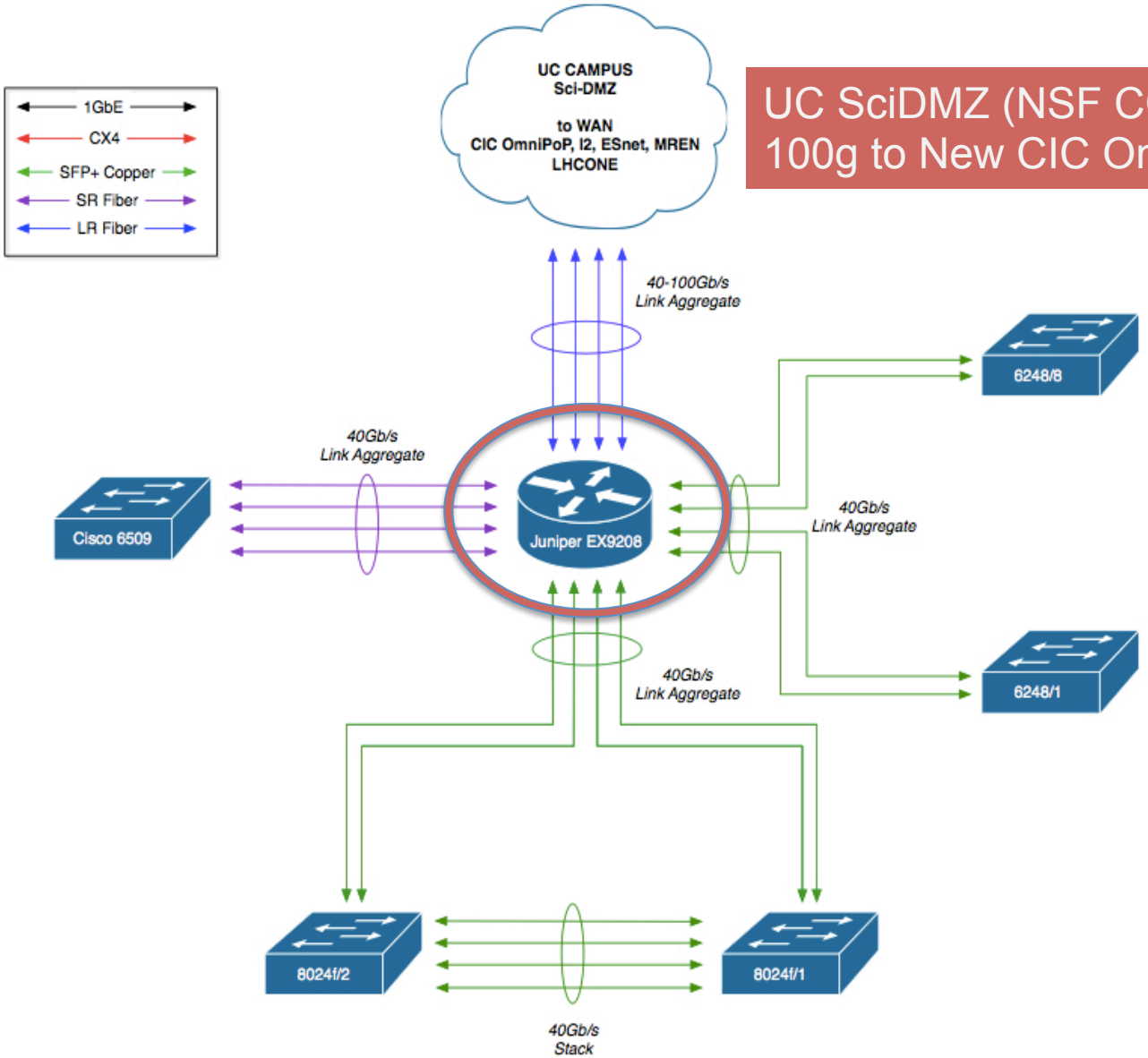
MWT2 UChicago Network Upgrade



UC SciDMZ (NSF CCNIE funds):
100g to New CIC OmniPoP switch @710 NLSD

Program purchased Juniper EX9208: ($118k) initial connectivity @ 4x10g

Not only serves as 100g uplink, but new aggregation hub for cluster

Fiber in place for 10x10g

UC ITS will purchase additional blade at campus edge to bring to 10x10g

MWT2-UChicago Timeline Summary

- June 2013 – Physical Network Completed
- July 2013 – Software/Monitoring Completed
- Sep 2013 – Configuration of new UCT2 EX9208 **[in progress]**
- Sep/Oct 2013 – Connect EX9208 to SciDMZ
- Sep 2013 – 100G link to CIC OmniPop **[done]**
- Sep/Oct 2013 – Migration MWT2 Peerings to 100G

Progress at MWT2_IU

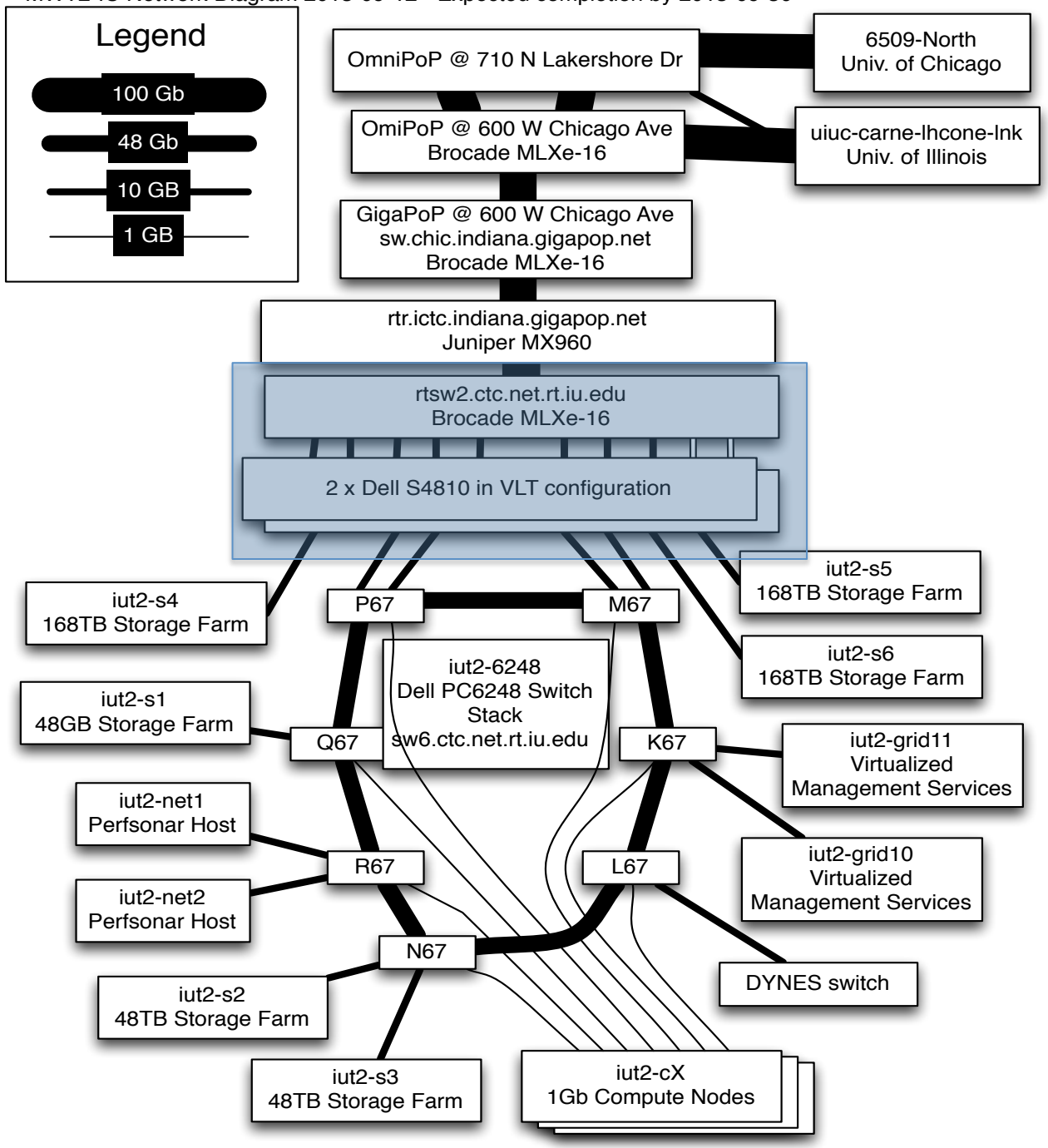
- Old setup: Dell 6248 Switch Stack
  - 7 Switches stacked in a ring with 40Gb links between them
  - 2x10Gb uplink to IU Research Network
  - 10Gb Links to storage farms and service nodes
  - 1GE links to compute nodes
  - See MWT2-IU-Network-v5 document

What's new at IU

- Checksum issue resolved, back to 100Gb IU Backbone
- 8-Port Brocade module + 8x10Gb optics installed
- Dell Force10 4810 and 8x10Gb optics installed
  - IU Research Network Brocade <-> MWT2 Dell switch spans more than one module to minimize link loss should module failure occur.
  - Aggregate link is up

5

MWT2-IU Network Diagram 2013-09-12 - Expected completion by 2013-09-30



IU

Program funded
2x S4810 and optics
to connect to Brocade
MLXe-16

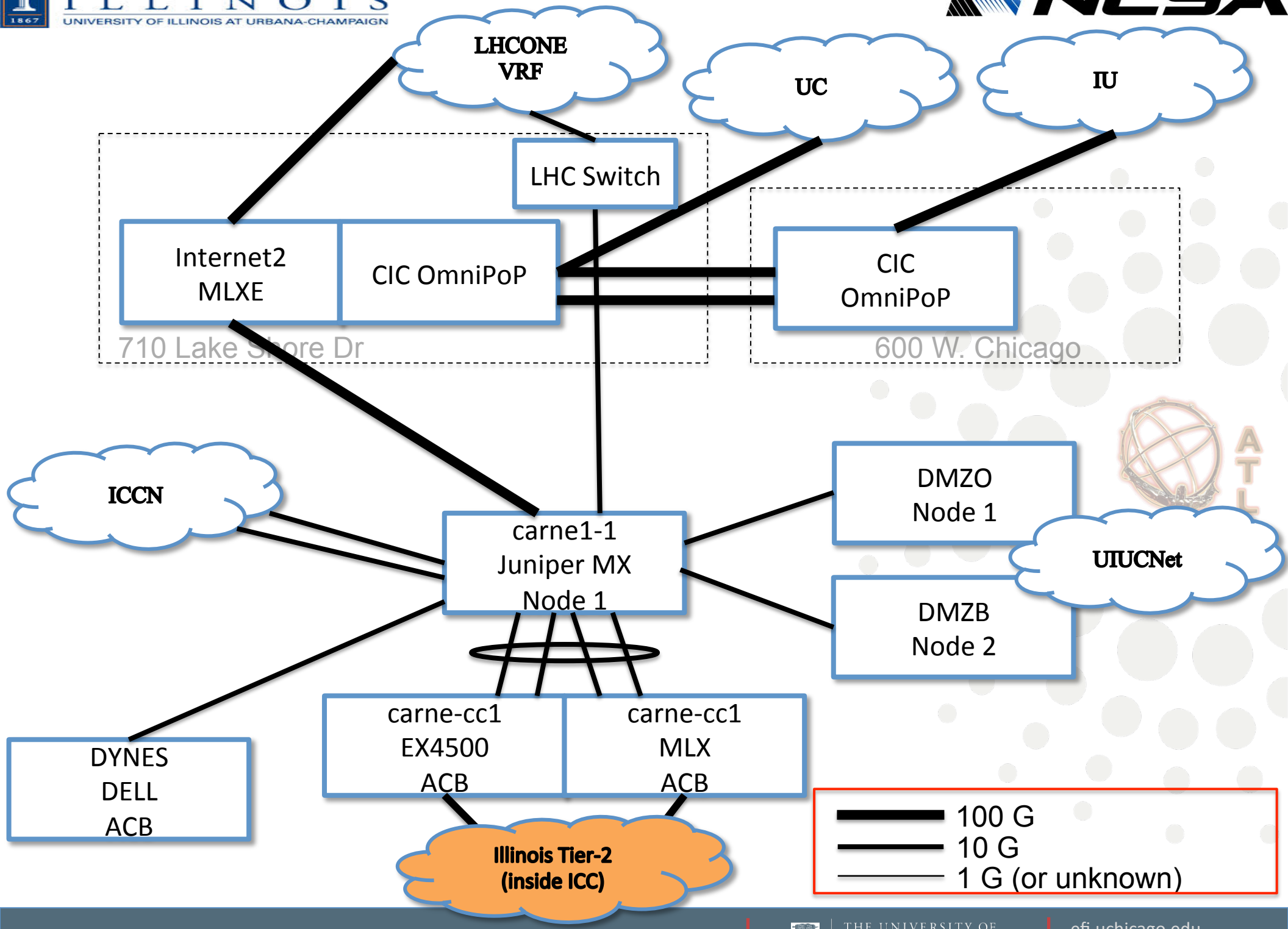
Provides high bandwidth
aggregation layer in
in Virtual Link Trunk
configuration

Improved redundancy and
bandwidth to existing
6248 stack

PerfSonar hosts to be added
to each S4810

UIUC Plan (10/8/13)

- Illinois Campus Cluster:
  - 10/16/13 Maintenance
    - Migration of the campus cluster aggregation router to the CARNE science DMZ
    - Once this is in place, we can increase the uplinks from the current two to the proposed eight outside of any campus cluster monthly maintenance window
  - Enable Nx10G links. Hardware:
    - MPC3e linecard ($38,775)
    - Multiple 10G MIC to install in the linecard ($14,850)
    - 12 X 10G SFP+ optics ($15,840)


LHCONE
VRF
UC
IU
LHC Switch
Internet2
MLXE
CIC OmniPoP
CIC
OmniPoP
710 Lake Shore Dr
600 W. Chicago
ICCN
carne1-1
Juniper MX
Node 1
DMZO
Node 1
UIUCNet
DMZB
Node 2
carne-cc1
EX4500
ACB
carne-cc1
MLX
ACB
DYNES
DELL
ACB
Illinois Tier-2
(inside ICC)
100 G
10 G
1 G (or unknown)

Other Chicago Peering Progress

- LHCONE
  - CIC has a connection today via 100G to Internet2
  - UC will work to get this scheduled ASAP
- ESnet and BNL
  - Still connect to old CIC switch, 100G pending
- Illinois
  - Still on old switch. Will schedule as soon as available.
- Indiana
  - Today we get there via MREN. They have 100G to CIC.
  - UC will work on scheduling this ASAP.
- MREN
  - UC has peering with MREN over 100G